REMARKS

Claims 1, 3, 5-10 and 13-19 are pending in the application. Claims 1, 3, 5-8 and 15 have been amended. Claims 2, 4, 11, 12 and 20 have been canceled without prejudice or disclaimer. Reconsideration of this application is respectfully requested.

The Office Action has objected to the specification on the ground that the title is not descriptive. The title has been changed to "AIRCRAFT MONITORING FAULT SYSTEM AND METHOD", which tracks the preambles of claims 1 and 15. Accordingly, it is submitted that the amendment obviates the objection to the specification and, therefore, that the objection should be withdrawn.

The Office Action has objected to the drawing on the ground that Figs. 1, 2a, 2b, 2c, 2d and 2e should be designated with a legend such as ---Prior Art---. Four sheets of the drawing are appended hereto with amended as proposed by the Office Action subject to the approval of the Examiner. These amendments provide a "Prior Art" legend marked thereon in red for Figs. 1, 2a, 2b, 2c, 2d and 2e. Therefore, it is submitted that the objection to the drawing is obviated.

The Office Action objects to claim 5 because it ends in a semicolon. Claim 5 has been changed to end in a period. Accordingly, it is submitted that the objection to claim 5 is obviated by the amendment.

The Office Action rejects claims 1-20 under 35 U.S.C. 102(e) as anticipated by U.S. Patent No. 6,560,725 to Longwell et al., hereafter Longwell.

This rejection is moot as to claims 2, 4, 11, 12 and 20, which have been canceled.

Contrary to the assertion of the Examiner in the explanation for rejecting claims 4 and 20, Longwell does not disclose or suggest any sub-threshold level. Independent claims 1 and 15 have been amended to incorporate the subject matter of claim 4 (and intervening claim 2) and claim 20, respectively. In addition, independent claims 1 and 15 have been amended so as to be directed to an aircraft fault monitoring system and method.

Also, independent claims 1 and 15 have been amended with the addition of the phrase "*in relation to said parameter*" so that the hard fault indication *and* the further fault indication relate to the *same* monitored aircraft operating parameter.

The present invention has a different objective from Longwell and a significant technical difference arises from this. The present invention is for the task of monitoring discrete aircraft operating parameters, (such as a thermocouple – see paragraph bridging pages 2 and 3 of the patent specification). This is so that a faulty component can be identified and serviced before it fails completely on the one hand, while avoiding the rejection of components simply because they give rise to low intermittent fault indications on the other hand. This reduces the need to take aircraft out of service unnecessarily by directing troubleshooting attention to those components, which are approaching a hard fault condition. It is important to appreciate that the present invention is concerned with fault monitoring of discrete aircraft components and identification of these when they are near to a hard fault condition. Independent claims 1 and 15, therefore, emphasise that it is the same parameter that is monitored in relation to the threshold value and the sub-threshold value.

Independent claims 1 and 15 have further been amended to recite *"a discrete aircraft operating parameter"* in line 3 of claim 1 and line 2 of claim 15.

In the context of the present invention, it is no use to look at the general health of the aircraft components and make diagnostic decisions based on that because if an aircraft component is nearing a hard fault condition, that specific component needs identifying and servicing.

In contrast, Longwell's objective is different. As apparent from the title, abstract and description, Longwell is directed to tracking errors in a memory device. Errors identified from the memory locations are recorded and a historical record of error patterns is established (column 4, lines 14-23). Errors are tracked so that when the pattern of identified errors corresponds to one of the error patterns, the device is able to make a diagnosis and implement a remedy (see for example, column 4, line 60 to column 5, line 31).

There are two levels of analysis in Longwell. The first goes to particular memory locations, which are disabled for data storage if they suffer from repeating errors above a selected threshold (column 4, lines 47-54), i.e., when the errors are to be treated as "hard errors" (column 4, line 52). It is acknowledged that the determination of hard errors when a threshold of error occurrence is breached is known in the art. This is acknowledged in the introduction on pages 1 and 2 of the specification of the present invention. However, in Longwell, there is no evaluation of the error count, in relation to a particular memory location, with reference to a sub-threshold value.

The second level of analysis goes to the operating health of the memory as a whole. In this case, Longwell tracks the errors, from wherever they occur, against the historical record so that appropriate diagnoses can be made and corrective action implemented in relation to the memory device as a whole. Specific remedies applied to the whole memory device are suggested in column 5, lines 18-55. It is clear from Longwell, column 4, line 60, to column 5, line 30, that the tracking of the errors is for the purpose of monitoring the health of the

global memory device and this tracking is not concerned with the health of any particular memory location.

In other words, in Longwell, the only count of errors in relation to any particular memory location is for the purposes of establishing whether the hard error criteria is reached as described in column 4, lines 47-52. There is no teaching or suggestion in Longwell to monitor when the error count in relation to a particular memory location (i.e. discrete aircraft operating parameter) lies between a sub-threshold level and a hard fault threshold level, in order to determine whether or not that particular memory location is progressing toward a hard fault condition. It follows that there is no determination in Longwell that any particular memory location is simply generating 'nuisance' fault indications.

In view of the above, it is clear that an application of Longwell to an aircraft fault monitoring system would not achieve the technical result of the invention. This is because it would be impossible to identify which of the discrete aircraft components or operating parameters were progressing toward a hard fault condition.

It is noted, in addition, that Longwell describes a highly computer intensive tracking system which would not be practical in a aircraft fault monitoring system. In the aircraft system of the invention, it is essential to be able to monitor the fault status of discrete components using a simple fault count protocol.

For the reasons set out above, the Examiner's assertion in relation to former claims 4 and 20 that in Longwell "some lower level threshold must be existent in the system to identify performance degradation that is not a hard error" is incorrect or incorrectly applied to the present invention.

For the reason set forth above, it is submitted that the rejection of claims 1, 3, 5-10 and 13-19 under 35 U.S.C. 102(e) as anticipated by Longwell is erroneous and should be withdrawn.

The Office Action cites a number of patents that were not applied in the rejections of the claims. These patents have been reviewed, but are believed to be inapplicable to the claims.

It is respectfully requested for the reasons set forth above that the objections to the specification and drawing and to claim 5 be withdrawn, that the rejection under 35 U.S.C. 102(e) be withdrawn, that claims 1, 3, 5-10 and 13-19 be allowed and that this application be passed to issue.

Respectfully Submitted,

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